AMENDMENTS TO THE CLAIMS

1. (Currently amended) An [[ICPT]] inductively coupled power transfer pick-up comprising:

a pick-up resonant ~~circuit, the~~ circuit comprising a capacitive element and an inductive element adapted to receive power from a magnetic field associated with a primary conductive path to supply a load;

a sensor configured to sense a condition of the load; and

a controller configured to selectively tune or de-tune the pick-up resonant circuit in response to the load sensed by the sensor by varying the effective capacitance or inductance of the capacitive or the inductive element of the pick-up resonant circuit to control the transfer of power to the pick-up resonant circuit dependant on the sensed load condition.

2. (Currently amended) [[A]] The inductively coupled power transfer pick-up as claimed in claim 1 wherein the controller comprises:

a reactive element; and

a switching device configured to allow the reactive element to be selectively electrically connected to the pick-up resonant circuit.

3. (Currently amended) [[A]] The inductively coupled power transfer pick-up as claimed in claim 2 wherein the controller is operable to control the switching device so that the apparent capacitance or inductance of the reactive element is varied to thereby tune or detune the pick-up resonant circuit.

4. (Currently amended) [[A]] The inductively coupled power transfer pick-up as claimed in claim 1 wherein the sensor senses the power required by the load.

5. (Currently amended) [[A]] The inductively coupled power transfer pick-up as claimed in claim 2, comprising:

a phase device configured to sense the phase of a voltage or current in the pick-up resonant circuit; and

whereby the controller ~~may actuate~~ actuates the switching device to allow the reactive element to be electrically connected to or disconnected from the pick-up resonant circuit dependant on the sensed phase.

6. (Currently amended) [[A]] The inductively coupled power transfer pick-up as claimed in claim 5 wherein:

the reactive element comprises an inductor,

the phase device senses a voltage in the pick-up resonant circuit, and

the controller is operable to switch the switching device to electrically connect or disconnect the inductor to or from the pick-up resonant circuit a predetermined time period after a sensed voltage zero crossing.

7. (Currently amended) [[A]] The inductively coupled power transfer pick-up as claimed in claim 4 further comprising:

a frequency sensing device configured to sense the frequency of the pick-up resonant circuit whereby the controller ~~may actuate~~ actuates the switching device to allow the reactive element to be electrically connected to or disconnected from the pick-up resonant circuit dependant on the sensed frequency to alter the natural resonant frequency of the pick-up resonant circuit.

8. (Currently amended) [[A]] The inductively coupled power transfer pick-up as claimed in claim 4 wherein:

the phase sensing device senses the frequency of the pick-up resonant circuit, and

whereby the controller ~~may actuate~~ actuates the switching device to allow the reactive element to be electrically connected to or disconnected from the pick-up resonant circuit dependant on the sensed frequency to alter the natural resonant frequency of the pick-up resonant circuit.

9. (Currently amended) [[A]] The inductively coupled power transfer pick-up as claimed in claim 6, wherein the controller is adapted to activate the switching device to connect the inductor to the pick-up resonant circuit after the predetermined time period following a voltage zero crossing has elapsed, and further adapted to allow the switching device to be deactivated when the voltage again reaches substantially zero.

10. (Currently amended) [[A]] The inductively coupled power transfer pick-up as claimed in claim 6, wherein the controller is capable of varying the predetermined time period between substantially 0 electrical degrees and substantially 180 electrical degrees.

11. (Currently amended) [[A]] The inductively coupled power transfer pick-up as claimed in claim 6 wherein the controller is capable of varying the predetermined time period between substantially 90 electrical degrees and substantially 150 electrical degrees.

12. (Currently amended) [[A]] The inductively coupled power transfer pick-up as claimed in claim 6 wherein the inductor is connected in parallel with a tuning capacitor of the pick-up resonant circuit.

13. (Currently amended) [[A]] The inductively coupled power transfer pick-up as claimed in claim 6 further comprising:

an inductor comprising two terminals; and

the switching device comprising at least two controllable semiconductor switching elements, a respective semiconductor switching element being connected between each terminal and the pick-up resonant circuit.

14. (Currently amended) [[A]] The inductively coupled power transfer pick-up as claimed in claim 13 wherein each switching element comprises an anti-parallel diode connected thereacross.

15. (Currently amended) [[A]] The inductively coupled power transfer pick-up as claimed in claim 13 wherein the semiconductor switch elements comprises at least one of IGBT's, MOSFETS, MCT's, and BJT's.

16. (Currently amended) [[A]] The inductively coupled power transfer pick-up as claimed in claim 3 wherein an inductor comprises the pick-up coil.

17. (Currently amended) [[A]] The inductively coupled power transfer pick-up as claimed in claim 5 wherein:

the reactive element comprises a capacitor,

the phase sensing device senses a voltage in the pick-up resonant circuit, and

the controller is operable to switch the switching device to electrically connect or disconnect the capacitor to or from the pick-up resonant circuit in a predetermined time period after a sensed voltage zero crossing.

18. (Currently amended) [[A]] The inductively coupled power transfer pick-up as claimed in claim 17 further comprising:

a frequency sensing device configured to sense the frequency of the pick-up resonant circuit, and

whereby the controller ~~may actuate~~ actuates the switching device to allow the reactive element to be electrically connected to or disconnected from the pick-up resonant circuit dependant on the sensed frequency to alter the natural resonant frequency of the pick-up resonant circuit.

19. (Currently amended) [[A]] The inductively coupled power transfer pick-up as claimed in claim 17 wherein:

the phase sensing device senses the frequency of the pick-up resonant circuit; and

whereby the controller ~~may actuate~~ actuates the switching device to allow the reactive element to be electrically connected to or disconnected from the pick-up resonant circuit dependant on the sensed frequency to alter the natural resonant frequency of the pick-up resonant circuit.

20. (Currently amended) [[A]] The inductively coupled power transfer pick-up as claimed in claim 17 wherein the controller is adapted to activate the switching device to disconnect the capacitor from the pick-up resonant circuit after the predetermined time period following a voltage zero crossing has elapsed.

21. (Currently amended) [[A]] The inductively coupled power transfer pick-up as claimed in claim 17 wherein the controller is capable of varying the predetermined time period between substantially 0 electrical degrees and substantially 90 electrical degrees.

22. (Currently amended) [[A]] The inductively coupled power transfer pick-up as claimed in claim 17 wherein the capacitor is connected in parallel with a tuning capacitor of the pick-up resonant circuit.

23. (Currently amended) [[A]] The inductively coupled power transfer pick-up as claimed in claim 22 wherein a capacitance of the capacitor is substantially equal to a capacitance of the tuning capacitor.

24. (Currently amended) [[A]] The inductively coupled power transfer pick-up as claimed in claim 17 wherein:

the capacitor comprises two terminals, and

the switching device comprises two controllable semiconductor switching elements, a respective semiconductor switching element being connected between each terminal and the pick-up resonant circuit.

25. (Currently amended) [[A]] The inductively coupled power transfer pick-up as claimed in claim 24 wherein each switching element comprises an anti-parallel diode connected thereacross.

26. (Currently amended) [[A]] The inductively coupled power transfer pick-up as claimed in claim 24 wherein the semiconductor switch elements comprise at least one of IGBT's, MOSFETS, and BJT's.

27. (Currently amended) [[A]] The inductively coupled power transfer pick-up as claimed in claim 17 wherein the variable reactance comprises the tuning capacitor of the pick-up resonant circuit.

28. (Currently amended) An [[ICPT]] inductively coupled power transfer system comprising:

a power supply comprising a resonant converter to provide alternating current to a primary conductive path of the [[ICPT]] inductively coupled power transfer system;

one or more secondary ~~pick-ups~~ pick-up resonant circuit, each pick-up comprising:

a pick-up resonant circuit comprising:

a capacitive element; and

an inductive element adapted to receive power from a magnetic field associated with a primary conductive path to supply a load;

a sensor configured to sense a condition of the load; and

a controller configured to selectively tune or de-tune the pick-up resonant circuit in response to the load sensed by the sensor by varying the effective capacitance or inductance of the capacitive element or the inductive element of the pick-up resonant circuit to control the transfer of power to the pick-up resonant circuit dependant on the sensed load condition.

29. (Currently amended) ~~An ICPT~~ The inductively coupled power transfer system as claimed in claim 28 wherein the primary conductive path comprises one or more turns of electrically conductive material.

30. (Currently amended) ~~An ICPT~~ The inductively coupled power transfer system as claimed in claim 29 wherein the primary conductive path is provided beneath a substantially planar surface.

31. (Currently amended) ~~An ICPT~~ The inductively coupled power transfer system as claimed in claim 28 wherein the primary conductive path comprises at least one region about which there is a greater magnetic field strength than one or more other regions of the path.

32. (Currently amended) ~~An ICPT~~ The inductively coupled power transfer system as claimed in claim 28 wherein the primary conductive path comprises one or more lumped inductances or one or more distributed inductances.

33. (Currently amended) ~~An ICPT~~ The inductively coupled power transfer system as claimed in claim 28 wherein the primary conductive path is mounted adjacent to an amorphous magnetic material to provide a desired magnetic flux path.

34. (Currently amended) ~~An ICPT~~ The inductively coupled power transfer system as claimed in claim 28 wherein the pick-up resonant circuit comprises an amorphous magnetic material adjacent to the pick-up coil to provide a desired magnetic flux path.

35. (Currently amended) ~~An ICPT~~ The inductively coupled power transfer system as claimed in claim 28 wherein the pick-up resonant circuit is battery-free.

36. (Currently amended) ~~An ICPT~~ The inductively coupled power transfer system as claimed in claim 28 wherein the pick-up resonant circuit comprises a super-capacitor.

37. (Currently amended) A method for controlling power drawn by an [[ICPT]] inductively coupled power transfer pick-up, the method comprising the steps of:

sensing a load condition of the pick-up resonant circuit; and

selectively tuning or detuning the pick-up resonant circuit depending upon the sensed load condition.

38. (Currently amended) A method as claimed in claim 37 wherein the step of tuning or detuning the pickup circuit comprises the step of moving a resonant frequency of the pick-up resonant circuit toward or away from a tuned condition.

39. (Currently amended) A method as claimed in claim 37 wherein the step of tuning or detuning the pick-up resonant circuit comprises the step of controlling a variable capacitor or inductor.

40. (Currently amended) A method as claimed in claim 37 further comprising the step of sensing a frequency of a current or voltage in the pick-up resonant circuit.

41. (Currently amended) A method as claimed in claim 40 further comprising the steps of:

comparing the sensed frequency with a nominal frequency for the pick-up resonant circuit; and

tuning or de-tuning toward or away from a nominal frequency dependant on the sensed load.

42. (Currently amended) A method as claimed in claim 37 further comprising the step of:

selectively switching a reactive element into or out of the pick-up resonant circuit to alter an apparent inductance or capacitance of the reactive element to thereby tune or de-tune the pick-up resonant circuit.

43. (Currently amended) A method as claimed in claim 42 further comprising the steps of:

sensing the phase of a voltage or current in the pick-up resonant circuit; and

electrically connecting or disconnecting the reactive element to or from the pick-up resonant circuit dependant on the sensed phase.

44. (Currently amended) A method as claimed in claim 43 further comprising the steps of:

sensing a phase of a voltage; and

electrically connecting the reactive element to the pick-up resonant circuit in a predetermined time period after a sensed voltage zero crossing.

45. (Currently amended) A method as claimed in claim 42 further comprising the steps of:

sensing the frequency of the pick-up resonant circuit; and

activating a switching device to electrically connect or disconnect the reactive element to or from the pick-up resonant circuit dependant on the sensed frequency to alter the natural resonant frequency of the pick-up resonant circuit.

46. (Currently amended) A method as claimed in claim 42 further comprising the steps of:

comparing the sensed frequency with a nominal frequency; and

varying the predetermined time period to tune the <u>pick-up</u> resonant circuit toward or away from the nominal frequency.

47. (Currently amended) A method as claimed in claim 42 further comprising the steps of:

activating a switching device to connect the reactive element to the <u>pick-up</u> resonant circuit after the predetermined time period following a voltage zero crossing has elapsed; and

allowing the switching device to be deactivated when the voltage again reaches substantially zero.

48. (Previously presented) A method as claimed in claim 42 further comprising the step of selecting the predetermined time period from a range between substantially 0 electrical degrees and substantially 180 electrical degrees.

49. (Previously presented) A method as claimed in claim 42 further comprising the step of selecting the predetermined time period from a range between substantially 90 electrical degrees and substantially 150 electrical degrees.

50. (Currently amended) A method as claimed in claim 43, further comprising the steps of:

sensing the phase of a voltage; and

electrically disconnecting the reactive element from the <u>pick-up</u> resonant circuit in a predetermined time period after a sensed voltage zero crossing.

51. (Previously presented) A method as claimed in claim 50 wherein:

the reactive element comprises a capacitor; and

the predetermined time period is selected from a range between substantially 0 electrical degrees and substantially 90 electrical degrees.

52.-54. (Cancelled).